

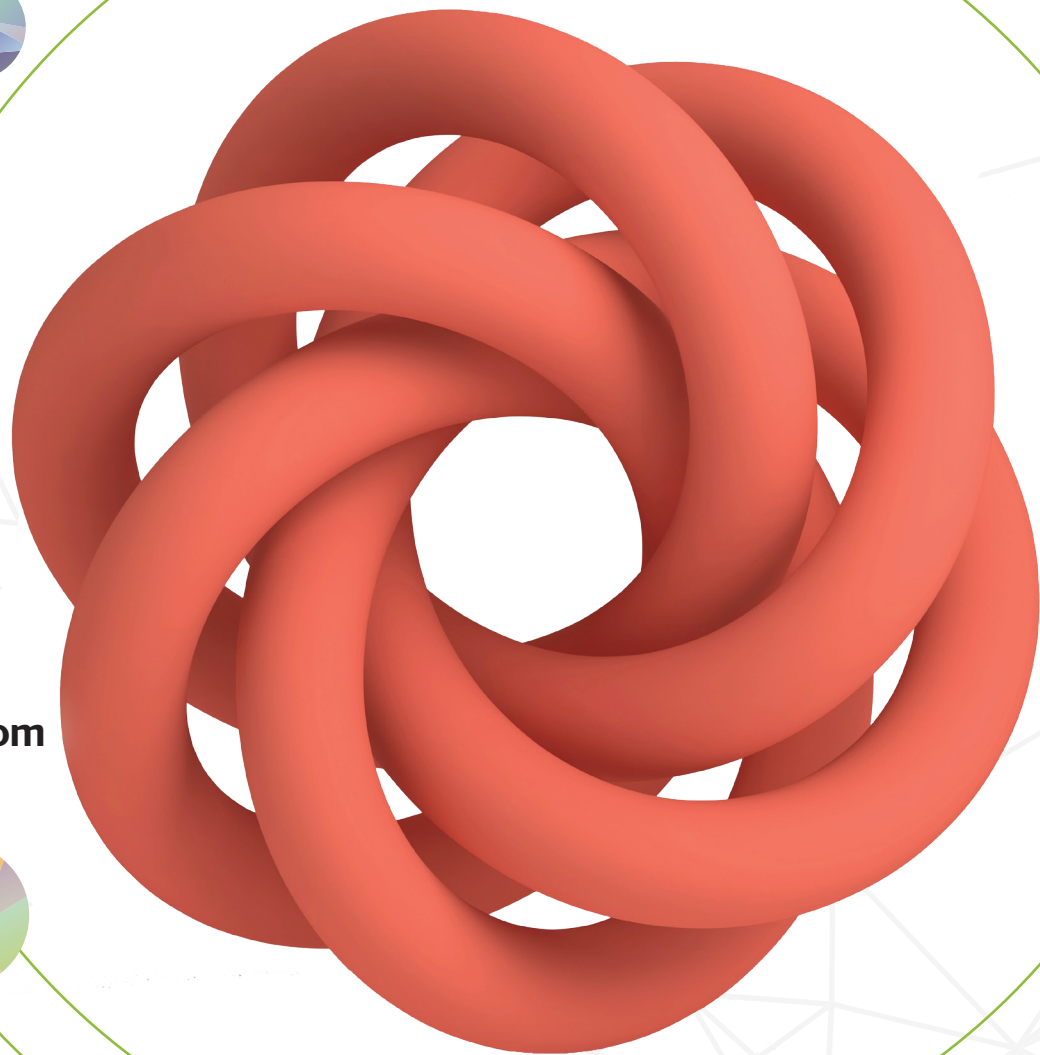
# INSTANTONS, KNOTS AND KNOTTED GRAPHS

**Thursday**  
**February 27th, 2020**

**5:30 PM**

**Newman Alumni Center**  
**6200 San Amaro Drive**  
**Coral Gables, FL 33146**

**RSVP**  
[ummcknight-zame2020.eventbrite.com](http://ummcknight-zame2020.eventbrite.com)



## **Tomasz Mrowka, Ph.D.**

*Professor of Mathematics, MIT*

*Member of the National Academy of Sciences*

*Fellow of the American Academy of Arts & Sciences*

*2007 Veblen Prize in Geometry Recipient*

Over the past four decades, input from geometry and analysis has been central to progress in the field of low-dimensional topology. This talk will focus on one aspect of these developments, namely, the use of Yang-Mills theory, or gauge theory. These techniques were pioneered by Simon Donaldson in his work on 4-manifolds beginning in 1982. The past ten years have seen new applications of gauge theory and new interactions with more recent threads in the subject, particularly in 3-dimensional topology and knot theory.

In our exploration of this subject, a recurring question will be, "How can we detect knottedness?" Many mathematical techniques have found application to this question, but gauge theory in particular has provided its own collection of answers, both directly and through its connection with other tools. Beyond classical knots, we will also take a look at the nearby but less-explored world of spatial graphs.

### **Hosted by Department of Mathematics**

The McKnight-Zame Distinguished Lecture Series is made possible by a generous donation from Dr. Jeffrey Fuqua (Ph.D., UM, 1972). These annual lectures are named in honor of Professor James McKnight, who directed Dr. Fuqua's Ph.D. thesis, and Professor Alan Zame, who was a close mentor of Dr. Fuqua.